SOVIET PHYSICS
USPEKHI

Volume 16 July 1973–June 1974

J. George Adashko, Editor

American Institute of Physics Translations Advisory Board
Robert T. Beyer, Chairman
J. George Adashko, Freeman Dyson, Dwight Gray
Morton Hamermesh, David Harker, Howard A. Robinson

a translation of the journal
УСПЕХИ ФИЗИЧЕСКИХ НАУК
Uspekhi Fizicheskikh Nauk (Advances in the Physical Sciences)
of the Academy of Sciences of the USSR
Russian original Vols. 109–111, January–December 1973

Editorial Board
E. V. Shpol'skii, Editor in Chief
L. F. Veres, S. G. Suvorov, Associate Editors V. A. Ugarov, Secretary
A. S. Akhmatov, D. I. Blokhintsev, V. L. Ginzburg, B. B. Kadomtsev, L. V. Keldysh
R. V. Khokhlov, L. B. Okun', L. P. Pitaevskii, Yu. D. Prokoshkin
G. V. Rozenberg, F. L. Shapiro, I. A. Yakovlev, Ya. B. Zel'dovich

published by the American Institute of Physics

Soviet Physics—USPEKHI Vol. 16, No. 1, July-Aug., 1973
(Russian original: Uspekhi Fizicheskikh Nauk, Vol. 109, Nos. 1 and 2, Jan.-Feb. 1973)

1 (31)	Rotational Brownian motion	K.A. Valiev and E.N. Ivanov
17 (65)	Problems of high-temperature superconductivity in three-dimensional systems	B.T. Geĭlikman
31 (91)	Interaction of particles and nuclei of high and ultrahigh energy with nuclei	V.S. Barashenkov, A.S. Il'inov, N.M. Sobolevskiĭ, and V.D. Toneev
53 (137)	Interaction of high-energy particles with deuterons	V.M. Kolybasov and M.S. Marinov
64 (225)	Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media	N.S. Erokhin and S.S. Moiseev
82 (259)	Planning of new accelerators and the problems of contemporary elementary-particle physics	D.I. Blokhintsev, A.V. Efremov, and R.M. Muradyan
88 (269)	Focused-image holography	I.S. Klimenko and G.V. Skrotskiĭ
99 (293)	Raman scattering of light near and far from resonance	P.P. Shorygin
121 (333)	Turbulence and microstructure in the ocean	A.S. Monin
	FROM THE HISTORY OF PHYSICS	
132 (167)	Kepler's works in optics (on the 400th anniversary of his birth)	V.P. Linnik
136 (175)	Johannes Kepler: from the mystery to the harmony	Yu.A. Danilov and Ya.A. Smorodinskiĭ
	METHODOLOGICAL NOTES	
156 (399)	General computer workshop for physics students of the Moscow State University	B.I. Volkov
158 (402)	Asynchronous excitation of undamped oscillations	D.I. Penner, D.B. Duboshinskiĭ, M.I. Kozakov, A.S. Vermel', and Yu.V. Galkin
161 (406)	Demonstration of light diffraction by a two-dimensional ultrasound structure in a liquid	K.N. Baranskiĭ and B.A. Sever
	FROM THE CURRENT LITERATURE	
163 (411)	Visual observation of cosmic rays	M.A. Gintzburg
	PERSONALIA	
165 (211)	Nikolaĭ Gennadievich Basov (on his fiftieth birthday)	A.I. Isakov, O.N. Krokhin, A.M. Prokhorov, D.V. Skobel'tsyn, and I.I. Sobel'man
167 (415)	Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday)	L.A. Artsimovich, I.I. Guervich, S.N. Zhurkov, I.K. Kikoin, Yu.S. Lazurkin, V.A. Sidorenko, V.M. Tuchkevich, and N.A. Chernoplekov
170 (419)	Anton Nikoforovich Sevchenko (on his seventieth birthday)	L.V. Volod'ko, L.V. Levshin, and K.N. Solov'ev

Other articles in these issues of Uspekhi Fizicheskikh Nauk (Vol. 109, Nos. 1-2)

5- 30	**Holography, 1948-1971**	
	[Nobel Lecture, December 13, 1971]	Dennis Gabor
157-166	**Light photographed in flight**	
	[Am. Scientist 59, 551 (1971)]	M.A. Duguay
355-369	**Black holes**	
	[Scientific American 226 (5), 38 (1972)]	R. Penrose
371-387	**Modifying the ionosphere with intense radio waves**	
	[Science 174, 245 (1971)]	W.F. Utlaut and R. Cohen
389-398	**The Discovery of the beta particle**	
	[Am. J. Phys. 39, 1454 (1971)]	M. Malley
215-225	**Bibliography**	
423-424		

Soviet Physics—USPEKHI Vol. 16, No. 2, Sept.-Oct. 1973
(Russian original: Uspekhi Fizicheskikh Nauk, Vol. 109, Nos. 3-4, March-April 1973)

173 (431) The interaction of slow antinucleons with nucleons and nuclei . . . . . I.S. Shapiro
185 (455) Three-dimensional electron microscopy of biological macromolecules . . . . . B.K. Vainshteĭn
207 (499) Physics and biology . . . . . N.V. Vol'kenshtein
217 (631) Hydrodynamics of plasma in a strong high-frequency field . L.M. Gorbunov
236 (667) Magnetooptic Faraday effect in semiconductors . . . . . Yu.I. Ukhanov
251 (695) The search for quarks . . . . . L.G. Landsberg
275 (756) Application of scale invariance to elementary particle physics . . . . . V.M. Dubovik

MEETINGS AND CONFERENCES

Science session of division of general physics and astronomy, USSR academy of sciences

279 (761) The dynamic conditions in galactic systems and the problem of latent matter . . . . . I.D. Karachentsev
279 (762) Certain distinctive features of the structure of the Atmospheres of Magnetic Stars . . . . . I.M. Kopylov and R.N. Kumaĭgorodskaya
281 (764) Problems of functional microelectronics . . . . . M.I. Elinson
281 (765) Present-day semiconductor microelectronics and the prospects of its development . . . . . K.A. Valiev
283 (768) The current state of Acoustooptics . . . . . S.V. Bogdanov and D.V. Sheloput

Joint science session of the division of general physics and astronomy of the USSR academy of sciences and the academy's council of radioastronomy

284 (769) The UTR-2 Decameter wave-band radiotelescope and the problems of decameter radioastronomy . . .S. Ya. Braude and A.V. Men'.
286 (771) Radioastronomical observations with the aid of interoferometers with independant reception (with ultralong base lines) . . . . . V.S. Troitskiĭ
287 (773) Quasiperiodic components in the fluctuations of the solar radio-frequancy radiation . . . . . M.M. Kobrin, A.I. Korshunov, and V.V. Pakhomov
288 (775) Pulsar observations at the radioastronomical station of the USSR Academy of Sciences Physical Institute . . . . . Yu.P. Shitov
289 (777) On the origin of Pulsar radiation . . . . . V.V. Zhelenyakov

PERSONALIA

291 (613) Mikhail Aleksandrovich Leontovich (on his 70th birthday) . . . . . A.P. Aleksandrov, L.A. Artsimovich, B.B. Kadomtsev, V.I. Kogan, A.M. Prokhorov, S.M. Rytov, V.D. Shafranov, and I.A. Yakovlev
293 (617) Georgiĭ Nikolaevich Flerov (on his 60th birthday) . . . . A.P. Aleksandrov, Ya.V. Zel'dovich, K.A. Petrzhak, and I.M. Frank
295 (779) Fedor L'vovich Shapiro (obituary) . . . . . B.M. Pontecorvo and I.M. Frank

Other articles in these issues of USPEKHI FIZICHESKIKH NAUK (Vol. 109, Nos. 3-4, March-April 1973)

517-544 **Biological order, structure and instabilities**
[Quart. Rev. Biophys. 4 (2/3), 107 (1971)] . . . . . J. Prigogine, G. Nicolis
545-589 **Molecular self-orginization and the early stages of evolution**
[Quart. Rev. Biophys. 4 (2/3), 149 (1971)] . . . . . Manfred Eigen
591-611 **Intercontinental radio astronomy**
[Sci. American 226 (2), 72 (1972)] . . . . . K.I. Kellerman
743-754 **Introducing scale symmetry**
[Phys. Today 25 (1), 23 (1972)] . . . . . Roman Jakiw
621-628
783-787 **Bibliography**

Soviet Physics—**USPEKHI** Vol. 16, No. 3, Nov.-Dec. 1973
(Russian Original: Uspekhi Fizicheskikh Nauk, Vol. 110, Nos. 1-2, May-June 1973)

299	(3)	Two-photon absorption and spectroscopy	V.I. Bredikhin, M.D. Galanin, V.N. Genkin
322	(45)	Electrodynamic processes in colliding beams of high-energy particles	V.G. Gorshkov
339	(169)	Nonlinear effects in the emission and absorption spectra of gases in resonant optical fields	I.M. Beterov, R.I. Sokolovskiĭ
350	(191)	The carbon monoxide laser. Population inversion mechanism	N.N. Sobolev, V.V. Sokovikov
361	(213)	Effect of small perturbations on the behavior of thermodynamics quantities near a second-order phase transition point	M.A. Mikulinskiĭ
381	(253)	The momentum-energy tensor of the electromagnetic field	D.V. Skobel'tsyn
		PHYSICS OF OUR DAYS	
402	(77)	Application of high-energy heavy charged particles in medicine	L.L. Gol'din, V.P. Dzhelepov, M.F. Lomanov, O.V. Savchenko, V.S. Khoroshkov
414	(115)	Particle motion in a laser beam	G.A. Askar'yan
		NEW DEVICES AND METHODS OF MEASUREMENT	
416	(117)	Linear induction accelerators—new generators of high power relativistic electron beams	Yu.P. Vakhrushin, I.M. Matora
		METHODOLOGICAL NOTES	
427	(139)	Scattering and emission of a quantum system in a strong electromagnetic wave	Ya.B. Zel'dovich
434	(309)	The laws of conservation of energy and momentum in emission of electromagnetic waves (photons) in a medium and the energy-momentum tensor in macroscopic electrodynamics	V.L. Ginzburg
		PERSONALIA	
440	(153)	Venedikt Petrovich Dzhelepov (on his sixtieth birthday)	V.P. Dmitrievskiĭ, L.I. Lapidus, M.A. Markov, B.M. Pontecorvo, A.A. Tyapkin
442	(155)	Boris Ivanovich Stepanov (on his sixtieth birthday)	A.M. Bonch-Bruevich, Yu.N. Denisyuk, F.I. Fedorov, P.P. Feofilov

Other articles in these issues of **USPEKHI FIZICHESKIKH NAUK** (Vol. 110, Nos. 1-2, May-June 1973)

101-114	**The pressure of laser light** *[Scientific American 226(2), 63 (1972)]*	A. Ashkin
293-307	**Optical interference coatings** *[Scientific American 223(6), 58 (1970)]*	Ph. Baumeister and G. Pincus
165-167	**Letter to the editor (concerning a book review)**	M.I. Shakhparonov
168	**Reply**	T.M. Burshteĭn, M.V. Vol'kenshteĭn, and O.B. Ptitsyn
157-164	**Bibliography**	
321-323	**Bibliography**	

Soviet Physics–**USPEKHI** Vol. 16, No. 4, Jan.-Feb., 1974
(Russian original: Uspekhi Fizicheskikh Nauk, Vol. 110, Nos. 3-4, July-August 1973)

445 (329)	Cyclotron oscillations of plasma in an inhomogeneous magnetic field	A.V. Timofeev
459 (357)	Weak interactions at short distances	B.L. Ioffe
485 (481)	Geometry and physics of the microcosmos	D.I. Blokhintsev
494 (499)	Diffusive random process approximation in certain nonstationary statistical problems of physics	V.I. Klyatskin, V.I. Tatarskiĭ
512 (537)	Kinetic equations for nonideal gas and nonideal plasma	Yu. L. Klimontovich
	NEW INSTRUMENTS AND MEASUREMENT METHODS	
529 (623)	Mirror electron microscopy	A.E. Luk'yanov, G.V. Spivak, R.S. Gvozdover
	METHODOLOGICAL NOTES	
553 (669)	Demonstration microscope with field emmission	B. Yu. Mirgorodskiĭ, D. Ya. Kostyukevich, D.A. Makarchenko
	MEETINGS AND CONFERENCES	
557 (437)	Anniversary Scientific Session of the Division of General Physics and Astronomy, USSR Academy of Sciences (22 November 1972)	
557 (437)	Laser thermonuclear fusion and parametric instabilities	R.Z. Sagdeev
559 (441)	Neutron stars and "black holes"	Ya. B. Zel'dovich
561 (443)	The development of physics in Belorussia	F.I. Fedorov
562 (444)	Joint Scientific Session of the Division of General Physics and Astronomy with the Nuclear Physics Division, USSR Academy of Sciences (27-28 December 1972)	
562 (444)	Compressed-gas lasers	N.S. Basov, É.M. Belenov, V.A. Danilychev, A.F. Suchkov
563 (445)	Feasibility of the nuclear-transition γ laser (Gaser)	V.I. Gol'danskiĭ, Yu. M. Kagan
565 (449)	The possibility of observing stimulated γ radiation	Yu. A. Il'inskiĭ, R.V. Khokhlov
567 (451)	Use of lasers in nuclear spectroscopy	V.S. Letokhov
568 (452)	Scientific Session of the Division of General Physics and Astronomy, USSR Academy of Sciences (17-18 January 1973)	
568 (453)	Influence of millimeter-band electromagnetic radiation on biological objects	N.D. Devyatkov
569 (455)	Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals	É.B. Bazanova, A.K. Bryukhova, R.L. Vilenskaya, É.A. Gel'vich, M.B. Golant, N.S. Landau, V.M. Mel'nikova, N.P. Mikaélyan, G.M. Okhokhonina, L.A. Sevast'yanova, A.Z. Smolyanskaya, N.A. Sycheva
570 (456)	A study of the effects of millimeter-band microwaves on the bone marrow of mice	L.A. Sevast'yanova, R.L. Vilenskaya
571 (458)	Effects of millimeter-band electromagnetic radiation on the functional activity of certain genetic elements of bacterial cells	A.Z. Smolyanskaya, R.L. Vilenskaya
572 (460)	Effects of millimeter-band radio waves on certain properties of bacteria	V.F. Kondrat'eva, E.N. Chistyakova, I.F. Shmakova, N.B. Ivanova, A.A. Treskunov

573 (461)	**Effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria**	S.E. Manoĭlov, E.N. Chistyakova, V.F. Kondrat'eva, M.A. Strelkova
574 (462)	**Reactions of living organisms to exposure to millimeter-band electromagnetic waves**	N.P. Zalyubovskaya
576 (464)	**Effects of millimeter-band electromagnetic waves in the cell and certain structural elements of the cell**	R.I. Kiselev, N.P. Zalyubovskaya
577 (466)	**Outlook for study of the mechanisms of the nonthermal effects of millimeter- and submillimeter-band electromagnetic radiation on biologically active compounds**	V.I. Gaĭduk, Yu. I. Khurgin, V.A. Kudryashova
579 (469)	**Symposium on the Philosophical Problems of Astronomy in the USSR Academy of Sciences**	

PERSONALIA

581 (471)	**Moiseĭ Izrailevich Korsunskiĭ (on his seventieth birthday)**	Ya. E. Genkin, D.K. Karpov, V.M. Kel'man, S.M. Chanyshev
583 (677)	**Lev Andreevich Artsimovich (obituary)**	A.P. Aleksandrov, E.P. Velikhov, I.N. Golovin, B.B. Kadomtsev, P.L. Kapitza, S.P. Kapitza, M.A. Leontovich, R.Z. Sagdeev, V.D. Shafranov

---

Other articles in these issues of **USPEKHI FIZICHESKIKH NAUK** (Vol. 110, Nos. 3-4, July-Aug. 1973)

405-418	**Prediction for superheavy nuclei** *[Phys. Today **25**(4), 30 (1972)]*	J.R. Nix
419-436	**Collective-effect accelerators** *[Scientific American **226**(4), 22 (1972)]*	D. Keefe
569-606	**Gravitational-wave astronomy** *[Preprint, CIT, Pasadent, Feb. 1972]*	W.H. Press, K.S. Thorne
607-621	**The x-ray sky** *[Scientific American **227**(1), 26 (July 1972)]*	H.W. Schnopper, J.P. Delvaille
473-477	**Bibliography**	
681-683	**Bibliography**	

Soviet Physics—USPEKHI Vol. 16, No. 5, March-April 1974
(Russian Original: Uspekhi Fizicheskikh Nauk, Vol. 111, Nos. 1-2, September-October 1973)

587 (3)	Global properties of matter in collapsed state ("black holes")	M.A. Markov
600 (29)	Duality, dual models, and experiment	E.M. Levin
630 (78)	Description of inelastic processes in dual models (B_5 phenomenology)	L.O. Enkovskiĭ, V.P. Shelest
642 (109)	Search for transuranium elements (methods, results, and prospects)	G.B. Zhdanov
658 (203)	Theory of the propagation of high-power laser radiation in a nonlinear medium	V.N. Lugovoĭ, A.M. Prokhorov
680 (249)	The self-focusing effect	G.A. Askar'yan
687 (261)	The effect of magnetic fields on photoprocesses in organic solids	I.A. Sokolik, E.L. Frankevich
	FROM THE HISTORY OF PHYSICS	
702 (173)	Sketches for a portrait of S. I. Vavilov	I.M. Frank
702 (173)	Recollections of physicists	S.I. Vavilov
705 (179)	What memory preserves	A.V. Shubnikov
706 (181)	From my memories of Sergeĭ Ivanovich Vavilov	B.A. Vvedenskiĭ
708 (185)	A conversation in the night	A.L. Mints
709 (187)	S. I. Vavilov at the FIAN	V.I. Veksler
	NEW INSTRUMENTS AND MEASUREMENT METHODS	
712 (305)	The Doppler method of measuring local velocities using lasers	B.S. Rinkevicius
726 (331)	A new class of electron emitters	N.A. Soboleva
	MEETINGS AND CONFERENCES	
739 (365)	Scientific session of the division of general physics and astronomy of the Academy of Sciences of the USSR	
739 (365)	Action of solar particle fluxes on the lower layers of the earth's atmosphere	É.R. Mustel'
740 (367)	Relation between seismic activity of the earth and and solar activity	A.D. Sytinskiĭ
741 (369)	"Mars-3": astrophysical studies of the lower atmosphere and the surface of the planet	V.I. Moroz, L.V. Ksanfomaliti A.É. Nadzhip
742 (370)	Study of the space plasma by the dispersion-interferometer method	M.A. Kolosov, N.A. Savich
743 (372)	A study of propagation of radio waves in the solar system using Soviet space stations	M.A. Kolosov, O.I. Yakovlev
744 (373)	Formation of the ionosphere of mars	G.S. Ivanov-Kholodnyĭ, A.V. Mikhaĭlov, N.A. Savich
747 (376)	Achievements and Current Problems of Solid-State Radiospectroscopy (From the Materials of the 17th Ampere Congress, Turku, Finland, August 21-26, 1972)	V.A. Atsarkin
749 (379)	Elementary nonlinear optical phenomena	N.B. Delone
752 (383)	On some results of statistical physics	V.K. Fedyanin
	PERSONALIA	
755 (191)	Bruno Pontecorvo (On Hix Sixtieth Birthday)	A.P. Aleksandrov, N.N. Bogolyubov, V.P. Dzhelepov, S.M. Korenchenko, M.A. Markov, A.A. Logunov, Yu. D. Prokoshkin
758 (195)	Nikolaĭ Aleksandrovich Borisevich (On his Fiftieth Birthday)	V.V. Gruzinskiĭ, B.I. Stepanov, V.A. Tolkachev, F.I. Fedorov

Other articles in these issues of **USPEKHI FIZICHESKIKH NAUK** (Vol. 111, Nos. 1-2, Sept.-Oct. 1973)

139-150	**Surface structure: an emerging spectroscopy** *[Physics Today 25(8), 23 (1972)]*	C.B. Duke, R.L. Park
150-157	**Pumping by chemical means** *[Physics Today 25(8), 32 (1972)]*	T. Tom
158-172	**Gauges for ultrahigh vacuum** *[Physics Today 25(8), 40 (1972)]*	W.T. Lange
289-303	**Electron spectroscopy for chemical analysis** *[Physics Today 25(1), (1972)]*	T.A. Carlson
355-364	**Symmetries in Fraunhofer diffraction** *[Amer. J. Phys. 40, 571 (1972)]*	E. Hecht
197-199	**Bibliography**	
389-390	**Bibliography**	

Soviet Physics–USPEKHI Vol. 16, No. 6, May-June 1974
(Russian original: Uspekhi Fizicheskikh Nauk, Vol. 111, Nos. 3-4, Nov.-Dec. 1973)

761 (395)	Nonlinear waves and their interaction	G.M. Zaslavskiĭ
777 (427)	Covariant quantization of the gravitational field	L.D. Faddeev, V.N. Popov
789 (451)	Density of states and interband absorption of light in strongly doped semiconductors	A.L. Éfros
806 (483)	Conduction-electron paramagnetic resonance in metals	B.M. Khabibullin, É.G. Kharakhash'yan
819 (507)	Light diffraction in thick films	N.M. Pomerantsev
828 (525)	Progress in the theory of strength and plasticity of solids (A review of A. V. Stepanov's works)	G.V. Kurdyumov, N.V. Klassen-Neklyudova
834 (579)	Laser spark in gases	G.V. Ostrovskaya, A.N. Zaĭdel'
856 (617)	Fluctuon states of electrons	M.A. Krivoglaz
878 (655)	Dislocation dragging by electrons in metals	M.I. Kaganov, V. Ya. Kravchenko, V.D. Natsik
892 (683)	Threshold phenomena and bound states in the polaron problem	I.B. Levinson, É.I. Rashba
	PHYSICS OF OUR DAYS	
913 (719)	The future of physics (future generations of particle accelerators)	M.A. Markov
	FROM THE CURRENT LITERATURE	
926 (743)	The discovery of neutral currents	L. Borisov
	THE ORGANIZATION OF SCIENCE	
928 (535)	Centenary of the "Journal of Experimental and Theoretical Physics" and the role of journals in the development of science	P.L. Kapitza
	METHODOLOGICAL NOTES	
934 (545)	Magnetostriction emmiters for lecture demonstrations on ultrasonics	V.V. Maĭer, V.É.-G. Khokhlovkin
935 (547)	Interference of 3-cm radio waves in a plane-parallel dielectric layer	L.P. Strelkova
937 (549)	Lecture demonstration on a bench with an air cusion	K.N. Baranskiĭ, D.F. Kiselev, V.V. Korchazhkih, S.I. Usagin
	MEETINGS AND CONFERENCES	
939 (553)	Scientific Session of the Division of General Physics and Astronomy, USSR Academy of Sciences (April 25-26, 1973)	
939 (553)	Layered superconductors with Josephson interaction of the layers	L.N. Bulaevskiĭ
940 (554)	Electron and phonon characteristics of Nb_3Sn	A.I. Golovashkin, G.P. Motulevich

(continued)

941 (556)	**Possibility of superconductivity in nonequilibrium systems with repulsion**	V.M. Galitskiĭ, V.F. Elesin, D.A. Kirzhnits, Yu. V. Kopaev, R. Kh. Timerov
943 (558)	**Multielement large optical telescope with controllable mirror shape**	M.I. Gvozdev, N.A. Dimov, N.L. Zhernokleev, V.S. Zuev, P.D. Kalachev, Yu. L. Kokurin, T.I. Marchenko, E.P. Orlov, V.A. Sautkin
943 (560)	**Ultrasonic and hypersonic surface waves**	I.A. Viktorov

Other Articles in these issues of **USPEKHI FIZICHESKIKH NAUK** (Vol. 111, Nos. 3-4, Nov.-Dec. 1973)

561-575 **Bibliography**

(Russian original: Uspekhi Fizicheskikh Nauk, Vols. 109–111, Jan.–Dec. 1973)

Analytic subject index to volume 16:

945 1 Communication, education, history, and philosophy
945 3 Classical and quantum mechanics
946 4 Relativity and gravitation
946 5 Statistical physics and thermodynamics
946 6 Measurement science, general laboratory techniques, and instrumentation systems
946 7 Specific instrumentation of general use in physics
946 11 General field and particle theory
946 12 Specific theories and interaction models; particle systematics
946 13 Specific reactions and phenomenology
946 14 Properties of specific particles and resonances
946 23 Nuclear decay and radioactivity
946 25 Nuclear reactions and scattering, specific reactions
946 27 Properties of specific nuclei listed by mass ranges
946 29 Experimental methods and instrumentation for elementary particle and nuclear physics
946 31 Atoms
946 32 Molecules
947 35 Macromolecules and polymers
947 41 Physics of gases
947 43 Plasma physics
947 51 Structure of liquids and solids; crystallography
947 52 Mechanical and acoustic properties of condensed matter
947 53 Lattice dynamics
947 54 Equations of state, phase equilibria, and phase transitions
947 55 Thermal properties of condensed matter
947 61 Electron states
947 62 Electronic transport in condensed matter
947 63 Electronic structure and electrical properties of surfaces, interfaces, and thin films
947 64 Superconductivity
947 65 Magnetic properties and materials
947 66 Magnetic resonance and relaxation in condensed matter; Mossbauer effect
947 67 Dielectric properties and materials
948 68 Optical properties and condensed-matter spectroscopy
948 69 Electron and ion emission by liquids and solids; impact phenomena
948 71 Optics
948 72 Acoustics
948 73 Biophysics, medical physics, and biomedical engineering
949 74 Physical chemistry
949 76 Electromagnetic technology
949 77 Electrical and magnetic devices
949 82 Astronomy, astrometry and astronomical instrumentation
949 83 Theoretical astrophysics
949 84 Galactic and extragalactic astronomy
949 85 Stellar astronomy
949 86 Solar system
949 87 Cosmic rays
949 88 Geophysics and earth sciences

950 Author index to volume 16

This index is based on the 1974 *Physics and Astronomy Classification Scheme* developed by AIP. It is not a translation. It was produced by computer-aided photocomposition directly from the magnetic tapes of the AIP's Current Physics Information System. Suggestions for improvements as well as other comments are welcome and should be addressed to the Editor.

A new feature introduced in this index is the inclusion of microfilm reel and frame numbers for the convenience of those wishing to find articles in *Current Physics Microform* (CPM), the monthly microfilm edition of the complete set of journals of the American Institute of Physics. These numbers are given in the form **CPM-7201A0321**, where 72 refers to the year, 01 denotes the month (January in this example), A the cartridge (generally there are four cartridges every month: A,B,C,D), and 0321 the frame.

SUBJECT INDEX TO VOLUME 16

Papers are arranged in ascending page number order.

1. COMMUNICATION, EDUCATION, HISTORY, AND PHILOSOPHY

1.20.+ Physics organizational activities

Anniversary Scientific Session of the Division of General Physics and Astronomy, USSR Academy of Sciences (22 November 1972) — **16**(4), 557 (Jan. 1974); CPM-7412X0957

Joint Scientific Session of the Division of General Physics and Astronomy with the Nuclear Physics Division, USSR Academy of Sciences (27–28 December 1972) —**16**(4), 562 (Jan. 1974); CPM-7412X0962

Scientific Session of the Division of General Physics and Astronomy, USSR Academy of Sciences (17–18 January 1973) —**16**(4), 568 (Jan. 1974); CPM-7412X0968

1.50.– Educational aids

General computer workshop for physics students of the Moscow State University —B. I. Volkov. **16**(1), 156–7 (Jul. 1973)

Magnetostriction emitters for lecture demonstrations on ultrasonics — V. V. Maier and V. É.-G. Khokhlovkin. **16**(6), 934–5 (May 1974)

Lecture demonstration on a bench with an air cushion —K. N. Baranskiĭ, D. F. Kiselev, V. V. Korchazhkih, and S. I. Usagin. **16** (6), 937–8 (May 1974)

1.60.+ Biographical, historical, and personal notes

Kepler's works in optics (on the 400th anniversary of his birth)–V. P. Linnik. **16**(1), 132–5 (Jul. 1973)

Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Anton Nikoforovich Sevhenko (on his seventieth birthday) —L. V. Volod'ko, L. V. Levshin, and K. N. Solov'ev. **16**(1), 170–1 (Jul. 1973)

Mikhaĭ Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Georgiĭ Nikolaevich Flerov (on his 60th birthday) —A. P. Aleksandrov, Ya. V. Zel'dovich, K. A. Petrzhak, and I. M. Frank. **16**(2), 293–4 (Sep. 1973)

Fedor L'vovich Shapiro (Obituary) —B. M. Pontecorvo and I. M. Frank. **16**(2), 295–7 (Sep. 1973)

Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. P. Dmitrievskiĭ, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

Boris Ivanovich Stepanov (on his sixtieth birthday) —A. M. Bonch-Bruevich, Yu. N. Denisyuk, F. I. Fedorov, and P. P. Feofilov. **16**(3), 442–3 (Nov. 1973); CPM-7410X0782

Sketches for a portrait of S. I. Vavilov —I. M. Frank. **16**(5), 702–11 (Mar. 1974); CPM-7412X1310

Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

Nikolaĭ Aleksandrovich Borisevich (on his fiftieth birthday) —V. V. Gruzinskiĭ, B. I. Stepanov, V. A. Tolkachev, and F. I. Fedorov. **16** (5), 758–9 (Mar. 1974)

1.65.+ History of science

Kepler's works in optics (on the 400th anniversary of his birth)–V. P. Linnik. **16**(1), 132–5 (Jul. 1973)

Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

The development of physics in Belorussia —F. I. Fedorov. **16**(4), 561–2 (Jan. 1974); CPM-7412X0961

Centenary of the "Journal of experimental and theoretical physics" and the role of journals in the developments of science —P. L. Kapitza. **16**(6), 928–33 (May 1974)

1.90.+ Other topics of general interest

Symposium on the philosophical problems of astronomy in the USSR Academy of Sciences —**16**(4), 579–80 (Jan. 1974); CPM-7412X0979

Erratum: "Interaction of intense optical radiation with free electron (nonrelativistic case)," [Sov. Phys.-Usp. 15, 416 (1973)]–F. V. Bunkin, A. E. Kazakov, and M. V. Fedorov. **16**(4), 585 (Jan. 1974); CPM-7412X0985

Erratum: Search for transuranium elements (methods, results, and prospects) [Sov. Phys.-Usp. 16, 642 (1974)] —G. B. Zhdanov. **16** (6), 944 (May 1974)

3. CLASSICAL AND QUANTUM MECHANICS

3.40.– Classical mechanics of continuous media, general mathematical problems

Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

Diffusive random process approximation in certain nonstationary statistical problems of physics —V. I. Klyatskin and V. I. Tatarskiĭ. **16**(4), 494–511 (Jan. 1974); CPM-7412X0894

Nonlinear waves and their interaction —G. M. Zaslavskiĭ. **16**(6), 761–76 (May 1974)

3.50.– Classical electrodynamics and classical field theory

The momentum–energy tensor of the electromagnetic field —D. V. Skobel'tsyn. **16**(3), 381–401 (Nov. 1973); CPM-7410X0721

The laws of conservation of energy and momentum in emission of electromagnetic waves (photons) in a medium and the energy–momentum tensor in macroscopic electrodynamics —V. L. Ginzburg. **16**(3), 434–9 (Nov. 1973); CPM-7410X0774

Erratum: "Interaction of intense optical radiation with free electrons (nonrelativistic case)," [Sov. Phys.-Usp. 15, 416 (1973)]–F. V. Bunkin, A. E. Kazakov, and M. V. Fedorov. **16**(4), 585 (Jan. 1974); CPM-7412X0985

3.60.– Quantum mechanics

Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

Asynchronous excitation of undamped oscillations —D. I. Penner, D. B. Duboshinskiĭ, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Scattering and emission of a quantum system in a strong electromagnetic wave —Ya. B. Zel'dovich. **16**(3), 427–33 (Nov. 1973); CPM-7410X0767

The laws of conservation of energy and momentum in emission of electromagnetic waves (photons) in a medium and the energy–momentum tensor in macroscopic electrodynamics —V. L. Ginzburg. **16**(3), 434–9 (Nov. 1973); CPM-7410X0774

4. RELATIVITY AND GRAVITATION

Geometry and physics of the microcosmos —D. I. Blokhintsev. **16**(4), 485–93 (Jan. 1974); CPM-7412X0885

Covariant quantization of the gravitational field —L. D. Faddeev and V. N. Popov. **16**(6), 777–88 (May 1974)

5. STATISTICAL PHYSICS AND THERMODYNAMICS

Rotational Brownian motion —K. A. Valiev and E. N. Ivanov. **16**(1), 1–6 (Jul. 1973); CPM-7406X0151

Effect of small perturbations on the behavior of thermodynamics quantities near a second-order phase transition point —M. A. Mikulinskiĭ. **16**(3), 361–80 (Nov. 1973); CPM-7410X0701

Diffusive random process approximation in certain nonstationary statistical problems of physics —V. I. Klyatskin and V. I. Tatarskiĭ. **16**(4), 494–511 (Jan. 1974); CPM-7412X0894

On some results of statistical physics (from the materials of the 4th Conference on Statistical Physics, L'vov, Sept. 4–10, 1972) —V. K. Fedyanin. **16**(5), 752–4 (Mar. 1974); CPM-7412X1360

Fluctuon states of electrons —M. A. Krivoglaz. **16**(6), 856–77 (May 1974)

6. MEASUREMENT SCIENCE, GENERAL LABORATORY TECHNIQUES, AND INSTRUMENTATION SYSTEMS

The Doppler method of measuring local velocities using lasers —B. S. Rinkevicius. **16**(5), 712–25 (Mar. 1974); CPM-7412X1320

7. SPECIFIC INSTRUMENTATION OF GENERAL USE IN PHYSICS

Three-dimensional electron microscopy of biological macromolecules —B. K. Vaĭnshtein. **16**(2), 185–206 (Sep. 1973)

Mirror electron microscopy —A. E. Luk'yanov, G. V. Spivak, and R. S. Gvozdover. **16**(4), 529–52 (Jan. 1974); CPM-7412X0929

11. GENERAL FIELD AND PARTICLE THEORY

Application of scale invariance to elementary particle physics —V. M. Dubovik. **16**(2), 275–8 (Sep. 1973)

Electrodynamic processes in colliding beams of high-energy particles —V. G. Gorshkov. **16**(3), 322–38 (Nov. 1973); CPM-7410X0662

Geometry and physics of the microcosmos —D. I. Blokhintsev. **16**(4), 485–93 (Jan. 1974); CPM-7412X0885

Description of inelastic processes in dual models (B_5 phenomenology) —L. L. Enkovszkiĭ and V. P. Shelest. **16**(5), 630–41 (Mar. 1974); CPM-7412X1238

The discovery of neutral currents —L. Borisov. **16**(6), 926–7 (May 1974)

12. SPECIFIC THEORIES AND INTERACTION MODELS; PARTICLE SYSTEMATICS

Planning of new accelerators and the problems of contemporary elementary-particle physics —D. I. Blokhintsev, A. V. Efremov, and R. M. Muradyan. **16**(1), 82–7 (Jul. 1973); CPM-7406X0232

The search for quarks —L. G. Landsberg. **16**(2), 251–74 (Sep. 1973)

Weak interactions at short distances —B. L. Ioffe. **16**(4), 459–84 (Jan. 1974); CPM-7412X0859

Duality, dual models, and experiment —E. M. Levin. **16**(5), 600–29 (Mar. 1974); CPM-7412X1208

The discovery of neutral currents —L. Borisov. **16**(6), 926–7 (May 1974)

13. SPECIFIC REACTIONS AND PHENOMENOLOGY

The interaction of slow antinucleons with nucleons and nuclei —I. S. Shapiro. **16**(2), 173–84 (Sep. 1973)

Description of inelastic processes in dual models (B_5 phenomenology) —L. L. Enkovszkiĭ and V. P. Shelest. **16**(5), 630–41 (Mar. 1974); CPM-7412X1238

14. PROPERTIES OF SPECIFIC PARTICLES AND RESONANCES

The search for quarks —L. G. Landsberg. **16**(2), 251–74 (Sep. 1973)

23. NUCLEAR DECAY AND RADIOACTIVITY

Use of lasers in nuclear spectroscopy —V. S. Letokhov. **16**(4), 567–8 (Jan. 1974); CPM-7412X0967

25. NUCLEAR REACTIONS AND SCATTERING, SPECIFIC REACTIONS

Interaction of particles and nuclei of high and ultrahigh energy with nuclei—V. S. Barashenkov, A. S. Il'inov, N. M. Sobolevskiĭ, and V. D. Toneev. **16**(1), 31–52 (Jul. 1973); CPM-7406X0181

Interaction of high-energy particles with deuterons —V. M. Kolybasov and M. S. Marinov. **16**(1), 53–63 (Jul. 1973); CPM-7406X0203

27. PROPERTIES OF SPECIFIC NUCLEI LISTED BY MASS RANGES

Search for transuranium elements (methods, results, and prospects) —G. B. Zhdanov. **16**(5), 642–57 (Mar. 1974); CPM-7412X1250

Erratum: Search for transuranium elements (methods, results, and prospects) [Sov. Phys.-Usp. 16, 642 (1974)] —G. B. Zhdanov. **16** (6), 944 (May 1974)

29. EXPERIMENTAL METHODS AND INSTRUMENTATION FOR ELEMENTARY PARTICLE AND NUCLEAR PHYSICS

29.20.+ Accelerators

Planning of new accelerators and the problems of contemporary elementary-particle physics —D. I. Blokhintsev, A. V. Efremov, and R. M. Muradyan. **16**(1), 82–7 (Jul. 1973); CPM-7406X0232

Linear induction accelerators-new generators of high power relativistic electron beams —Yu. P. Vakhrushin and I. M. Matora. **16**(3), 416–26 (Nov. 1973); CPM-7410X0756

The future of physics (future generations of particle accelerators) —M. A. Markov. **16**(6), 913–25 (May 1974)

29.90.+ Other topics in high-energy experimental methods and instrumentation

Search for transuranium elements (methods, results, and prospects) —G. B. Zhdanov. **16**(5), 642–57 (Mar. 1974); CPM-7412X1250

31. ATOMS

Elementary nonlinear optical phenomena (from the materials of the 1st International Conference on Interaction of Electrons with Strong Electromagnetic-Radiation Fields, Balatonfüret, Hungary, Sept. 11–16, 1972) —N. B. Delone. **16**(5), 749–52 (Mar. 1974); CPM-7412X1357

32. MOLECULES

Raman scattering of light near and far from resonance —P. P. Shorygin. **16**(1), 99–120 (Jul. 1973); CPM-7406X0249

Elementary nonlinear optical phenomena (from the materials of the 1st International Conference on Interaction of Electrons with Strong Electromagnetic-Radiation Fields, Balatonfüret, Hungary, Sept. 11–16, 1972) —N. B. Delone. **16**(5), 749–52 (Mar. 1974); CPM-7412X1357

35. MACROMOLECULES AND POLYMERS

Three-dimensional electron microscopy of biological macromolecules —B. K. Vainshtein. **16**(2), 185–206 (Sep. 1973)

41. PHYSICS OF GASES

Laser spark in gases —G. V. Ostrovskaya and A. N. Zaĭdel'. **16**(6), 834–55 (May 1974)

43. PLASMA PHYSICS

43.45.– Plasma waves: oscillations and instabilities

Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

Hydrodynamics of plasma in a strong high-frequency field —L. M. Gorbunov. **16**(2), 217–35 (Sep. 1973)

Cyclotron oscillations of plasma in an inhomogeneous magnetic field —A. V. Timofeev. **16**(4), 445–58 (Jan. 1974); CPM-7412X0845

43.90.+ Other topics in plasma physics and electric discharges

Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

Hydrodynamics of plasma in a strong high-frequency field —L. M. Gorbunov. **16**(2), 217–35 (Sep. 1973)

Kinetic equations for nonideal gas and nonideal plasma —Yu. L. Klimontovich. **16**(4), 512–28 (Jan. 1974); CPM-7412X0912

Laser thermonuclear fusion and parametric instabilities —R. Z. Sagdeev. **16**(4), 557–9 (Jan. 1974); CPM-7412X0957

Laser spark in gases —G. V. Ostrovskaya and A. N. Zaĭdel'. **16**(6), 834–55 (May 1974)

51. STRUCTURE OF LIQUIDS AND SOLIDS; CRYSTALLOGRAPHY

Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

52. MECHANICAL AND ACOUSTIC PROPERTIES OF CONDENSED MATTER

Progress in the theory of strength and plasticity of solids (A review of A. V. Stepanov's works) —G. V. Kurdyumov and N. V. Klassen-Neklyudova. **16**(6), 828–33 (May 1974)

Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

53. LATTICE DYNAMICS

Electron and phonon characteristics of Nb_3Sn —A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

54. EQUATIONS OF STATE, PHASE EQUILIBRIA, AND PHASE TRANSITIONS

Effect of small perturbations on the behavior of thermodynamics quantities near a second-order phase transition point —M. A. Mikulinskiĭ. **16**(3), 361–80 (Nov. 1973); CPM-7410X0701

55. THERMAL PROPERTIES OF CONDENSED MATTER

Effect of small perturbations on the behavior of thermodynamics quantities near a second-order phase transition point —M. A. Mikulinskiĭ. **16**(3), 361–80 (Nov. 1973); CPM-7410X0701

61. ELECTRON STATES

Kinetic equations for nonideal gas and nonideal plasma —Yu. L. Klimontovich. **16**(4), 512–28 (Jan. 1974); CPM-7412X0912

Density of states and interband absorption of light in strongly doped semiconductors —A. L. Éfros. **16**(6), 789–805 (May 1974)

Threshold phenomena and bound states in the polaron problem —I. B. Levinson and É. I. Rashba. **16**(6), 892–912 (May 1974)

62. ELECTRONIC TRANSPORT IN CONDENSED MATTER

The effect of magnetic fields on photoprocesses in organic solids —I. A. Sokolik and E. L. Frankevich. **16**(5), 687–701 (Mar. 1974); CPM-7412X1295

63. ELECTRONIC STRUCTURE AND ELECTRICAL PROPERTIES OF SURFACES, INTERFACES, AND THIN FILMS

Electron and phonon characteristics of Nb_3Sn —A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

64. SUPERCONDUCTIVITY

Problems of high-temperature superconductivity in three-dimensional systems —B. T. Geĭlikman. **16**(1), 17–30 (Jul. 1973); CPM-7406X0167

Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

Layered superconductors with Josephson interaction of the layers —L. N. Bulaevskiĭ. **16**(6), 939–40 (May 1974)

Electron and phonon characteristics of Nb_3Sn —A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskiĭ, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

65. MAGNETIC PROPERTIES AND MATERIALS

Fluctuon states of electrons —M. A. Krivoglaz. **16**(6), 856–77 (May 1974)

66. MAGNETIC RESONANCE AND RELAXATION IN CONDENSED MATTER; MOSSBAUER EFFECT

Feasibility of the nuclear-transition γ laser (gaser) —V. I. Gol'danskiĭ and Yu. M. Kagan. **16**(4), 563–5 (Jan. 1974); CPM-7412X0963

Achievements and current, problems of solid-state radiospectroscopy (from the materials of the 17th Ampere Congress, Turku, Finland, August 21–26, 1972) —V. A. Atsarkin. **16**(5), 747–9 (Mar. 1974); CPM-7412X1355

Conduction-electron paramagnetic resonance in metals —B. M. Khabibullin and É. G. Kharakhash'yan. **16**(6), 806–18 (May 1974)

67. DIELECTRIC PROPERTIES AND MATERIALS

Achievements and current, problems of solid-state radiospectroscopy (from the materials of the 17th Ampere Congress, Turku, Finland, August 21–26, 1972) —V. A. Atsarkin. **16**(5), 747–9 (Mar. 1974); CPM-7412X1355

68. OPTICAL PROPERTIES AND CONDENSED-MATTER SPECTROSCOPY

68.20.- Optical properties and materials

Demonstration of light diffraction by a two-dimensional ultrasound structure in a liquid —K. N. Baranskiĭ and G. A. Sever. **16**(1), 161–2 (Jul. 1973)

Magnetooptic Faraday effect in semiconductors —Yu. I. Ukhanov. **16** (2), 236–50 (Sep. 1973)

The current state of acoustooptics —D. V. Sheloput and S. V. Bogdanov. **16**(2), 283–4 (Sep. 1973)

68.90.+ Other topics in optical properties of condensed matter

Raman scattering of light near and far from resonance —P. P. Shorygin. **16**(1), 99–120 (Jul. 1973); CPM-7406X0249

The effect of magnetic fields on photoprocesses in organic solids —I. A. Sokolik and E. L. Frankevich. **16**(5), 687–701 (Mar. 1974); CPM-7412X1295

Density of states and interband absorption of light in strongly doped semiconductors —A. L. Éfros. **16**(6), 789–805 (May 1974)

Threshold phenomena and bound states in the polaron problem —I. B. Levinson and É. I. Rashba. **16**(6), 892–912 (May 1974)

Electron and phonon characteristics of Nb_3Sn —A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

69. ELECTRON AND ION EMISSION BY LIQUIDS AND SOLIDS; IMPACT PHENOMENA

A new class of electron emitters —N. A. Soboleva. **16**(5), 726–38 (Mar. 1974); CPM-7412X1334

Elementary nonlinear optical phenomena (from the materials of the 1st International Conference on Interaction of Electrons with Strong Electromagnetic-Radiation Fields, Balatonfüret, Hungary, Sept. 11–16, 1972) —N. B. Delone. **16**(5), 749–52 (Mar. 1974); CPM-7412X1357

71. OPTICS

71.60.- Lasers

The carbon monoxide laser. Population inversion mechanism —N. N. Sobolev and V. V. Sokovikov. **16**(3), 350–60 (Nov. 1973); CPM-7410X0690

Particle motion in a laser beam —G. A. Askar'yan. **16**(3), 414–5 (Nov. 1973); CPM-7410X0754

Compressed-gas lasers —N. S. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. **16**(4), 562–3 (Jan. 1974); CPM-7412X0962

Feasibility of the nuclear-transition γ laser (gaser) —V. I. Gol'danskiĭ and Yu. M. Kagan. **16**(4), 563–5 (Jan. 1974); CPM-7412X0963

The possibility of observing stimulated γ radiation —Yu. A. Il'inskiĭ and R. V. Khokhlov. **16**(4), 565–7 (Jan. 1974); CPM-7412X0965

Use of lasers in nuclear spectroscopy —V. S. Letokhov. **16**(4), 567–8 (Jan. 1974); CPM-7412X0967

Theory of the propagation of high-power laser radiation in a nonlinear medium —V. N. Ludgovoi and A. M. Prokhorov. **16**(5), 658–79 (Mar. 1974); CPM-7412X1266

The Doppler method of measuring local velocities using lasers —B. S. Rinkevicius. **16**(5), 712–25 (Mar. 1974); CPM-7412X1320

71.65.- Nonlinear optics

Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

Raman scattering of light near and far from resonance —P. P. Shorygin. **16**(1), 99–120 (Jul. 1973); CPM-7406X0249

Two-photon absorption and spectroscopy —V. I. Bredikhin, M. D. Galanin, and V. N. Genkin. **16**(3), 299–321 (Nov. 1973)

Nonlinear effects in the emission and absorption spectra of gases in resonant optical fields —I. M. Beterov and R. I. Sokolovskiĭ. **16** (3), 339–49 (Nov. 1973); CPM-7410X0679

Theory of the propagation of high-power laser radiation in a nonlinear medium —V. N. Ludgovoi and A. M. Prokhorov. **16**(5), 658–79 (Mar. 1974); CPM-7412X1266

The self-focusing effect —G. A. Askar'yan. **16**(5), 680–6 (Mar. 1974); CPM-7412X1288

Elementary nonlinear optical phenomena (from the materials of the 1st International Conference on Interaction of Electrons with Strong Electromagnetic-Radiation Fields, Balatonfüret, Hungary, Sept. 11–16, 1972) —N. B. Delone. **16**(5), 749–52 (Mar. 1974); CPM-7412X1357

71.90.+ Other topics in optics

Focused-image holography —I. S. Klimenko and G. V. Skrotskiĭ. **16** (1), 88–98 (Jul. 1973); CPM-7406X0238

Kepler's works in optics (on the 400th anniversary of his birth)—V. P. Linnik. **16**(1), 132–5 (Jul. 1973)

Two-photon absorption and spectroscopy —V. I. Bredikhin, M. D. Galanin, and V. N. Genkin. **16**(3), 299–321 (Nov. 1973)

Particle motion in a laser beam —G. A. Askar'yan. **16**(3), 414–5 (Nov. 1973); CPM-7410X0754

Light diffraction in thick films —N. M. Pomerantsev. **16**(6), 819–27 (May 1974)

Interference of 3-cm radio waves in a plane-parallel dielectric layer —L. P. Strelkova. **16**(6), 935–7 (May 1974)

Large multielement optical telescope with controllable mirror shape — M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

72. ACOUSTICS

Magnetostriction emitters for lecture demonstrations on ultrasonics — V. V. Maĭer and V. É.-G. Khokhlovkin. **16**(6), 934–5 (May 1974)

Ultrasonic and hypersonic surface waves —I. A. Viktorov. **16**(6), 943–4 (May 1974)

73. BIOPHYSICS, MEDICAL PHYSICS, AND BIOMEDICAL ENGINEERING

73.60.- Medical physics

Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

Influence of millimeter-band electromagnetic radiation on Biological Objects —N. D. Devyatkov. **16**(4), 568–9 (Jan. 1974); CPM-7412X0968

Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

A study of the effects of millimeter-band microwaves on the bone marrow of mice —L. A. Sevast'yanova and R. L. Vilenskaya. **16** (4), 570–1 (Jan. 1974); CPM-7412X0970

Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria —S. E. Manoĭlov, E. N. Chistyakova, V. F. Kondrat'eva, and M. A. Strelkova. **16**(4), 573–4 (Jan. 1974); CPM-7412X0973

Reactions of living organisms to exposure to millimeter-band electromagnetic waves —N. P. Zalyubovskaya. **16**(4), 574–6 (Jan. 1974); CPM-7412X0974

Effects of millimeter-band electromagnetic waves on the cell and certain structural element of the cell —R. I. Kiselev and N. P. Zalyubovskaya. **16**(4), 576–7 (Jan. 1974); CPM-7412X0976

Outlook for study of the mechanisms of the nonthermal effects of millimeter- and submillimeter-band electromagnetic radiation on biologically active compounds —V. I. Gaiduk, Yu. I. Khurgin, and V. A. Kudryashova. **16**(4), 577–8 (Jan. 1974); CPM-7412X0977

— —D. S. Chernavskiĭ. **16**(4), 578–9 (Jan. 1974); CPM-7412X0978

73.90.+ Other topics in biophysics, medical physics, and biomedical engineering

Visual observation of cosmic rays —M. A. Gintzburg. **16**(1), 163–4 (Jul. 1973)

Physics and biology —M. V. Vol'kenshteĭn. **16**(2), 207–16 (Sep. 1973)

effects of millimeter-band electromagnetic radiation on the functional activity of certain genetic elements of bacterial cells —A. Z. Smolyanskaya and R. L. Vilenskaya. **16**(4), 571–2 (Jan. 1974); CPM-7412X0971

74. PHYSICAL CHEMISTRY

The effect of magnetic fields on photoprocesses in organic solids —I. A. Sokolik and E. L. Frankevich. **16**(5), 687–701 (Mar. 1974); CPM-7412X1295

Fluctuon states of electrons —M. A. Krivoglaz. **16**(6), 856–77 (May 1974)

76. ELECTROMAGNETIC TECHNOLOGY

Problems of functional microelectronics —M. I. Elinson. **16**(2), 281 (Sep. 1973)

Present day semiconductor microelectronics and the prospects of its development —K. A. Valiev. **16**(2), 281–3 (Sep. 1973)

Particle motion in a laser beam —G. A. Askar'yan. **16**(3), 414–5 (Nov. 1973); CPM-7410X0754

77. ELECTRICAL AND MAGNETIC DEVICES

Magnetostriction emitters for lecture demonstrations on ultrasonics — V. V. Maĭer and V. É.-G. Khokhlovkin. **16**(6), 934–5 (May 1974)

82. ASTRONOMY, ASTROMETRY AND ASTRONOMICAL INSTRUMENTATION

82.40.– Astronomical observations (listed by type of observation)

Quasiperiodic components in the fluctuations of the solar radio-frequency radiation —M. M. Kobrin, A. I. Korshunov, and V. V. Pakhomov. **16**(2), 287–8 (Sep. 1973)

Pulsar observations at the radio-astronomical station of the USSR Academy of Sciences Physics Institute —Yu P. Shitov. **16**(2), 288–9 (Sep. 1973)

Study of the space plasma by the dispersion interferometer method — M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

A study of propagation of radio waves in the solar system using soviet space stations —M. A. Kolosov and O. I. Yakovlev. **16**(5), 743–4 (Mar. 1974); CPM-7412X1351

82.70.– Astronomical observation techniques

The UTR-2 decameter wave-band radiotelescope and the problems of —S. Ya. Braude and A. V. Men'. **16**(2), 284–6 (Sep. 1973)

Radioastronomical observations with the aid of interferometers with independent reception (with ultralong base lines) in the USSR —V. S. Troitskiĭ. **16**(2), 286–7 (Sep. 1973)

Study of the space plasma by the dispersion interferometer method — M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

83. THEORETICAL ASTROPHYSICS

Neutron stars and "black holes." —Ya. B. Zel'dovich. **16**(4), 559–61 (Jan. 1974); CPM-7412X0959

Global properties of matter in collapsed state ("black holes") —M. A. Markov. **16**(5), 587–99 (Mar. 1974); CPM-7412X1195

84. GALACTIC AND EXTRAGALACTIC ASTRONOMY

84.20.– Stellar systems

The dynamic conditions in galactic systems and the problem of latent matter —I. D. Karachentsev. **16**(2), 279 (Sep. 1973)

84.60.– High-energy astrophysics and cosmology

Pulsar observations at the radio-astronomical station of the USSR Academy of Sciences Physics Institute —Yu P. Shitov. **16**(2), 288–9 (Sep. 1973)

On the Origin of Pulsar Radiation —V. V. Zheleznyakov. **16**(2), 289–90 (Sep. 1973)

Neutron stars and "black holes." —Ya. B. Zel'dovich. **16**(4), 559–61 (Jan. 1974); CPM-7412X0959

85. STELLAR ASTRONOMY

Certain distinctive features of the structure of the atmospheres of magnetic stars —I. M. Kopylov and R. N. Kumaigorodskaya. **16** (2), 279 (Sep. 1973)

Neutron stars and "black holes." —Ya. B. Zel'dovich. **16**(4), 559–61 (Jan. 1974); CPM-7412X0959

86. SOLAR SYSTEM

86.40.– Planetary system, excluding moon

Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

"Mars-3": Astrophysical studies of the lower atmosphere and the surface of the planet —V. I. Moroz, L. V. Ksanfomaliti, and A. É. Nadzhip. **16**(5), 741–2 (Mar. 1974); CPM-7412X1349

Study of the space plasma by the dispersion interferometer method — M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

A study of propagation of radio waves in the solar system using soviet space stations —M. A. Kolosov and O. I. Yakovlev. **16**(5), 743–4 (Mar. 1974); CPM-7412X1351

Formation of the ionosphere of Mars —G. S. Ivanov-Kholodnyĭ, A. V. Mikhaĭlov, and N. A. Savich. **16**(5), 744–6 (Mar. 1974); CPM-7412X1352

86.60.– Moon

Quasiperiodic components in the fluctuations of the solar radio-frequency radiation —M. M. Kobrin, A. I. Korshunov, and V. V. Pakhomov. **16**(2), 287–8 (Sep. 1973)

Relation between seismic activity of the earth and solar activity —A. D. Sytinskiĭ. **16**(5), 740–1 (Mar. 1974); CPM-7412X1348

Study of the space plasma by the dispersion interferometer method — M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

A study of propagation of radio waves in the solar system using soviet space stations —M. A. Kolosov and O. I. Yakovlev. **16**(5), 743–4 (Mar. 1974); CPM-7412X1351

87. COSMIC RAYS

Visual observation of cosmic rays —M. A. Gintzburg. **16**(1), 163–4 (Jul. 1973)

Search for transuranium elements (methods, results, and prospects) — G. B. Zhdanov. **16**(5), 642–57 (Mar. 1974); CPM-7412X1250

88. GEOPHYSICS AND EARTH SCIENCES

Turbulence and microstructure in the ocean —A. S. Monin. **16**(1), 121–31 (Jul. 1973); CPM-7406X0271

Action of solar particle fluxes on the lower layers of the earth's atmosphere —É. R. Mustel'. **16**(5), 739–40 (Mar. 1974); CPM-7412X1347

Relation between seismic activity of the earth and solar activity —A. D. Sytinskiĭ. **16**(5), 740–1 (Mar. 1974); CPM-7412X1348

AUTHOR INDEX TO VOLUME 16

Papers are arranged in ascending page number order.

A

Aleksandrov, A. P.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

—Georgii Nikolaevich Flerov (on his 60th birthday) —A. P. Aleksandrov, Ya. V. Zel'dovich, K. A. Petrzhak, and I. M. Frank. **16**(2), 293–4 (Sep. 1973)

—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

Artsimovich, L. A.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Askar'yan, G. A.—Particle motion in a laser beam —G. A. Askar'yan. **16**(3), 414–5 (Nov. 1973); CPM-7410X0754

—The self-focusing effect —G. A. Askar'yan. **16**(5), 680–6 (Mar. 1974); CPM-7412X1288

Atsarkin, V. A.—Achievements and current, problems of solid-state radiospectroscopy (from the materials of the 17th Ampere Congress, Turku, Finland, August 21–26, 1972) —V. A. Atsarkin. **16**(5), 747–9 (Mar. 1974); CPM-7412X1355

B

Baranskiĭ, K. N.—Demonstration of light diffraction by a two-dimensional ultrasound structure in a liquid —K. N. Baranskiĭ and G. A. Sever. **16**(1), 161–2 (Jul. 1973)

—Lecture demonstration on a bench with an air cushion —K. N. Baranskiĭ, D. F. Kiselev, V. V. Korchazhkiĭ, and S. I. Usagin. **16**(6), 937–8 (May 1974)

Barashenkov, V. S.—Interaction of particles and nuclei of high and ultrahigh energy with nuclei—V. S. Barashenkov, A. S. Il'inov, N. M. Sobolevskiĭ, and V. D. Toneev. **16**(1), 31–52 (Jul. 1973); CPM-7406X0181

Basov, N. S.—Compressed-gas lasers —N. S. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. **16**(4), 562–3 (Jan. 1974); CPM-7412X0962

Bazanova, É. B.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Belenov, É. M.—Compressed-gas lasers —N. S. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. **16**(4), 562–3 (Jan. 1974); CPM-7412X0962

Beterov, I. M.—Nonlinear effects in the emission and absorption spectra of gases in resonant optical fields —I. M. Beterov and R. I. Sokolovskiĭ. **16**(3), 339–49 (Nov. 1973); CPM-7410X0679

Blokhintsev, D. I.—Planning of new accelerators and the problems of contemporary elementary-particle physics —D. I. Blokhintsev, A. V. Efremov, and R. M. Muradyan. **16**(1), 82–7 (Jul. 1973); CPM-7406X0232

—Geometry and physics of the microcosmos —D. I. Blokhintsev. **16**(4), 485–93 (Jan. 1974); CPM-7412X0885

Bogdanov, S. V.—The current state of acoustooptics —D. V. Sheloput and S. V. Bogdanov. **16**(2), 283–4 (Sep. 1973)

Bogolyubov, N. N.—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

Bonch-Bruevich, A. M.—Boris Ivanovich Stepanov (on his sixtieth birthday) —A. M. Bonch-Bruevich, Yu. N. Denisyuk, F. I. Fedorov, and P. P. Feofilov. **16**(3), 442–3 (Nov. 1973); CPM-7410X0782

Borisov, L.—The discovery of neutral currents —L. Borisov. **16**(6), 926–7 (May 1974)

Braude, S. Ya.—The UTR-2 decameter wave-band radiotelescope and the problems of —S. Ya. Braude and A. V. Men'. **16**(2), 284–6 (Sep. 1973)

Bredikhin, V. I.—Two-photon absorption and spectroscopy —V. I. Bredikhin, M. D. Galanin, and V. N. Genkin. **16**(3), 299–321 (Nov. 1973)

Bryukhova, A. K.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Bulaevskiĭ, L. N.—Layered superconductors with Josephson interaction of the layers —L. N. Bulaevskiĭ. **16**(6), 939–40 (May 1974)

Bunkin, F. V.—Erratum: "Interaction of intense optical radiation with free electrons (nonrelativistic case)," [Sov. Phys.-Usp. 15, 416 (1973)]—F. V. Bunkin, A. F. Kazakov, and M. V. Fedorov. **16**(4), 585 (Jan. 1974); CPM-7412X0985

C

Chernavskiĭ, D. S.— —D. S. Chernavskiĭ. **16**(4), 578–9 (Jan. — 1974); CPM-7412X0978

Chernoplekov, N. A.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Chistyakova, E. N.—Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

—effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria —S. E. Manoĭlov, E. N. Chistyakova, V. F. Kondrat'eva, and M. A. Strelkova. **16**(4), 573–4 (Jan. 1974); CPM-7412X0973

D

Danilov, Yu. A.—Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

Danilychev, V. A.—Compressed-gas lasers —N. S. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. **16**(4), 562–3 (Jan. 1974); CPM-7412X0962

Delone, N. B.—Elementary nonlinear optical phenomena (from the materials of the 1st International Conference on Interaction of Electrons with Strong Electromagnetic-Radiation Fields, Balatonfüret, Hungary, Sept. 11–16, 1972) —N. B. Delone. **16**(5), 749–52 (Mar. 1974); CPM-7412X1357

Denisyuk, Yu. N.—Boris Ivanovich Stepanov (on his sixtieth birthday) —A. M. Bonch-Bruevich, Yu. N. Denisyuk, F. I. Fedorov, and P. P. Feofilov. **16**(3), 442–3 (Nov. 1973); CPM-7410X0782

Devyatkov, N. D.—Influence of millimeter-band electromagnetic radiation on Biological Objects —N. D. Devyatkov. **16**(4), 568–9 (Jan. 1974); CPM-7412X0968

Dimov, N. I.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Dmitrievskiĭ, V. P.—Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. F. Dmitrievskiĭ, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

Duboshinskiĭ, D. B.—Asynchronous excitation of undamped oscillations —D. I. Penner, D. B. Duboshinskiĭ, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Dubovik, V. M.—Application of scale invariance to elementary particle physics —V. M. Dubovik. **16**(2), 275–8 (Sep. 1973)

Dzhelepov, V. P.—Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

E

Efremov, A. V.—Planning of new accelerators and the problems of contemporary elementary-particle physics —D. I. Blokhintsev, A. V. Efremov, and R. M. Muradyan. **16**(1), 82–7 (Jul. 1973); CPM-7406X0232

Éfros, A. L.—Density of states and interband absorption of light in strongly doped semiconductors —A. L. Éfros. **16**(6), 789–805 (May 1974)

Elesin, V. F.—Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskiĭ, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

Elinson, M. I.—Problems of functional microelectronics —M. I. Elinson. **16**(2), 281 (Sep. 1973)

Enkovszkiĭ, L. L.—Description of inelastic processes in dual models (B_5 phenomenology) —L. L. Enkovszkiĭ and V. P. Shelest. **16**(5), 630–41 (Mar. 1974); CPM-7412X1238

Erokhin, N. S.—Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

F

Faddeev, L. D.—Covariant quantization of the gravitational field —L. D. Faddeev and V. N. Popov. **16**(6), 777–88 (May 1974)

Fedorov, F. I.—Boris Ivanovich Stepanov (on his sixtieth birthday) —A. M. Bonch-Bruevich, Yu. N. Denisyuk, F. I. Fedorov, and P. P. Feofilov. **16**(3), 442–3 (Nov. 1973); CPM-7410X0782

—The development of physics in Belorussia —F. I. Fedorov. **16**(4), 561–2 (Jan. 1974); CPM-7412X0961

—Nikolai Aleksandrovich Borisevich (on his fiftieth birthday) —V. V. Gruzinskiĭ, B. I. Stepanov, V. A. Tolkachev, and F. I. Fedorov. **16**(5), 758–9 (Mar. 1974)

Fedorov, M. V.—Erratum: "Interaction of intense optical radiation with free electrons (nonrelativistic case)," [Sov. Phys.-Usp. 15, 416 (1973)] —F. V. Bunkin, A. E. Kazakov, and M. V. Fedorov. **16**(4), 585 (Jan. 1974); CPM-7412X0985

Fedyanin, V. K.—On some results of statistical physics (from the materials of the 4th Conference on Statistical Physics, L'vov, Sept. 4–10, 1972) —V. K. Fedyanin. **16**(5), 752–4 (Mar. 1974); CPM-7412X1360

Feofilov, P. P.—Boris Ivanovich Stepanov (on his sixtieth birthday) —A. M. Bonch-Bruevich, Yu. N. Denisyuk, F. I. Fedorov, and P. P. Feofilov. **16**(3), 442–3 (Nov. 1973); CPM-7410X0782

Frank, I. M.—Georgii Nikolaevich Flerov (on his 60th birthday) —A. P. Aleksandrov, Ya. V. Zel'dovich, K. A. Petrzhak, and I. M. Frank. **16**(2), 293–4 (Sep. 1973)

—Fedor L'vovich Shapiro (Obituary) —B. M. Pontecorvo and I. M. Frank. **16**(2), 295–7 (Sep. 1973)

—Sketches for a portrait of S. I. Vavilov —I. M. Frank. **16**(5), 702–11 (Mar. 1974); CPM-7412X1310

Frankevich, E. L.—The effect of magnetic fields on photoprocesses in organic solids —I. A. Sokolik and E. L. Frankevich. **16**(5), 687–701 (Mar. 1974); CPM-7412X1295

G

Gaĭduk, V. I.—Outlook for study of the mechanisms of the nonthermal effects of millimeter- and submillimeter-band electromagnetic radiation on biologically active compounds —V. I. Gaĭduk, Yu. I. Khurgin, and V. A. Kudryashova. **16**(4), 577–8 (Jan. 1974); CPM-7412X0977

Galanin, M. D.—Two-photon absorption and spectroscopy —V. I. Bredikhin, M. D. Galanin, and V. N. Genkin. **16**(3), 299–321 (Nov. 1973)

Galitskiĭ, V. M.—Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskiĭ, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

Galkin, Yu. V.—Asynchronous excitation of undamped oscillations —D. I. Penner, D. B. Duboshinskiĭ, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Geilikman, B. T.—Problems of high-temperature superconductivity in three-dimensional systems —B. T. Geilikman. **16**(1), 17–30 (Jul. 1973); CPM-7406X0167

Gel'vich, É. A.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Genkin, V. N.—Two-photon absorption and spectroscopy —V. I. Bredikhin, M. D. Galanin, and V. N. Genkin. **16**(3), 299–321 (Nov. 1973)

Gintzburg, M. A.—Visual observation of cosmic rays —M. A. Gintzburg. **16**(1), 163–4 (Jul. 1973)

Ginzburg, V. L.—The laws of conservation of energy and momentum in emission of electromagnetic waves (photons) in a medium and the energy–momentum tensor in macroscopic electrodynamics —V. L. Ginzburg. **16**(3), 434–9 (Nov. 1973); CPM-7410X0774

Golant, M. B.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Gol'danskiĭ, V. I.—Feasibility of the nuclear–transition γ laser (gaser) —V. I. Gol'danskiĭ and Yu. M. Kagan. **16**(4), 563–5 (Jan. 1974); CPM-7412X0963

Gol'din, L. L.—Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

Golovashkin, A. I.—Electron and phonon characteristics of Nb_3Sn —A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

Gorbunov, L. M.—Hydrodynamics of plasma in a strong high-frequency field —L. M. Gorbunov. **16**(2), 217–35 (Sep. 1973)

Gorshkov, V. G.—Electrodynamic processes in colliding beams of high-energy particles —V. G. Gorshkov. **16**(3), 322–38 (Nov. 1973); CPM-7410X0662

Gruzinskiĭ, V. V.—Nikolai Aleksandrovich Borisevich (on his fiftieth birthday) —V. V. Gruzinskiĭ, B. I. Stepanov, V. A. Tolkachev, and F. I. Fedorov. **16**(5), 758–9 (Mar. 1974)

Guervich, I. I.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Gvozdev, M. I.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Gvozdover, R. S.—Mirror electron microscopy —A. E. Luk'yanov, G. V. Spivak, and R. S. Gvozdover. **16**(4), 529–52 (Jan. 1974); CPM-7412X0929

I

Il'inov, A. S.—Interaction of particles and nuclei of high and ultrahigh energy with nuclei —V. S. Barashenkov, A. S. IL'inov, N. M. Sobolevskiĭ, and V. D. Toneev. **16**(1), 31–52 (Jul. 1973); CPM-7406X0181

Il'inskiĭ, Yu. A.—The possibility of observing stimulated γ radiation —Yu. A. Il'inskiĭ and R. V. Khokhlov **16**(4), 565–7 (Jan. 1974); CPM-7412X0965

Ioffe, B. L.—Weak interactions at short distances —B. L. Ioffe. **16** (4), 459–84 (Jan. 1974); CPM-7412X0859

Isakov, A. I.—Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

Ivanov, E. N.—Rotational Brownian motion —K. A. Valiev and E. N. Ivanov. **16**(1), 1–6 (Jul. 1973); CPM-7406X0151

Ivanova, N. B.—Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

Ivanov-Kholodnyĭ, G. S.—Formation of the ionosphere of Mars —G. S. Ivanov-Kholodnyĭ, A. V. Mikhaĭlov, and N. A. Savich. **16**(5), 744–6 (Mar. 1974); CPM-7412X1352

K

Kadomtsev, B. B.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Kagan, Yu. M.—Feasibility of the nuclear-transition γ laser (gaser) —V. I. Gol'danskiĭ and Yu. M. Kagan. **16**(4), 563–5 (Jan. 1974); CPM-7412X0963

Kaganov, M. I.—Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

Kalachev, P. D.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Kapitza, P. L.—Centenary of the "Journal of experimental and theoretical physics" and the role of journals in the developments of science —P. L. Kapitza. **16**(6), 928–33 (May 1974)

Karachentsev, I. D.—The dynamic conditions in galactic systems and the problem of latent matter —I. D. Karachentsev. **16**(2), 279 (Sep. 1973)

Kazakov, A. E.—Erratum: "Interaction of intense optical radiation with free electrons (nonrelativistic case)," [Sov. Phys.-Usp. 15, 416 (1973)] —F. V. Bunkin, A. E. Kazakov, and M. V. Fedorov. **16**(4), 585 (Jan. 1974); CPM-7412X0985

Khabibullin, B. M.—Conduction-electron paramagnetic resonance in metals —B. M. Khabibullin and É. G. Kharakhash'yan. **16**(6), 806–18 (May 1974)

Kharakhash'yan, É. G.—Conduction-electron paramagnetic resonance in metals —B. M. Khabibullin and É. G. Kharakhash'yan. **16**(6), 806–18 (May 1974)

Khokhlov, R. V.—The possibility of observing stimulated γ radiation —Yu. A. Il'inskiĭ and R. V. Khokhlov. **16**(4), 565–7 (Jan. 1974); CPM-7412X0965

Khokhlovkin, V. É.-G.—Magnetostriction emitters for lecture demonstrations on ultrasonics —V. V. Maier and V. É.-G. Khokhlovkin. **16**(6), 934–5 (May 1974)

Khoroshkov, V. S.—Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

Khurgin, Yu. I.—Outlook for study of the mechanisms of the nonthermal effects of millimeter- and submillimeter-band electromagnetic radiation on biologically active compounds —V. I. Gaiduk, Yu. I. Khurgin, and V. A. Kudryashova. **16**(4), 577–8 (Jan. 1974); CPM-7412X0977

Kikoin, I. K.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Kirzhnits, D. A.—Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskiĭ, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

Kiselev, D. F.—Lecture demonstration on a bench with an air cushion —K. N. Baranskiĭ, D. F. Kiselev, V. V. Korchazhkih, and S. I. Usagin. **16**(6), 937–8 (May 1974)

Kiselev, R. I.—Effects of millimeter-band electromagnetic waves on the cell and certain structural element of the cell —R. I. Kiselev and N. P. Zalyubovskaya. **16**(4), 576–7 (Jan. 1974); CPM-7412X0976

Klassen-Neklyudova, N. V.—Progress in the theory of strength and plasticity of solids (A review of A. V. Stepanov's works) —G. V. Kurdyumov and N. V. Klassen-Neklyudova. **16**(6), 828–33 (May 1974)

Klimenko, I. S.—Focused-image holography —I. S. Klimenko and G. V. Skrotskii. **16**(1), 88–98 (Jul. 1973); CPM-7406X0238

Klimontovich, Yu. L.—Kinetic equations for nonideal gas and nonideal plasma —Yu. L. Klimontovich. **16**(4), 512–28 (Jan. 1974); CPM-7412X0912

Klyatskin, V. I.—Diffusive random process approximation in certain nonstationary statistical problems of physics —V. I. Klyatskin and V. I. Tatarskiĭ. **16**(4), 494–511 (Jan. 1974); CPM-7412X0894

Kobrin, M. M.—Quasiperiodic components in the fluctuations of the solar radio-frequency radiation —M. M. Kobrin, A. I. Korshunov, and V. V. Pakhomov. **16**(2), 287–8 (Sep. 1973)

Kogan, V. I.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Kokurin, Yu. L.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Kolosov, M. A.—Study of the space plasma by the dispersion interferometer method —M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

—A study of propagation of radio waves in the solar system using soviet space stations —M. A. Kolosov and O. I. Yakovlev. **16**(5), 743–4 (Mar. 1974); CPM-7412X1351

Kolybasov, V. M.—Interaction of high-energy particles with deuterons —V. M. Kolybasov and M. S. Marinov. **16**(1), 53–63 (Jul. 1973); CPM-7406X0203

Kondrat'eva, V. F.—Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

—effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria —S. E. Manoilov, E. N. Chistyakova, V. F. Kondrat'eva, and M. A. Strelkova. **16**(4), 573–4 (Jan. 1974); CPM-7412X0973

Kopaev, Yu. V.—Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskiĭ, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

Kopylov, I. M.—Certain distinctive features of the structure of the atmospheres of magnetic stars —I. M. Kopylov and R. N. Kumaigorodskaya. **16**(2), 279 (Sep. 1973)

Korchazhkih, V. V.—Lecture demonstration on a bench with an air cushion —K. N. Baranskiĭ, D. F. Kiselev, V. V. Korchazhkih, and S. I. Usagin. **16**(6), 937–8 (May 1974)

Korenchenko, S. M.—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

Korshunov, A. I.—Quasiperiodic components in the fluctuations of the solar radio-frequency radiation —M. M. Kobrin, A. I. Korshunov, and V. V. Pakhomov. **16**(2), 287–8 (Sep. 1973)

Kozakov, M. I.—Asynchronous excitation of undamped oscillations —D. I. Penner, D. B. Duboshinskiĭ, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Kravchenko, V. Ya.—Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

Krivoglaz, M. A.—Fluctuon states of electrons —M. A. Krivoglaz. **16** (6), 856–77 (May 1974)

Krokhin, O. N.—Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

Ksanfomaliti, L. V.—"Mars-3": Astrophysical studies of the lower atmosphere and the surface of the planet —V. I. Moroz, L. V. Ksanfomaliti, and A. É. Nadzhip. **16**(5), 741–2 (Mar. 1974); CPM-7412X1349

Kudryashova, V. A.—Outlook for study of the mechanisms of the nonthermal effects of millimeter- and submillimeter-band electromagnetic radiation on biologically active compounds —V. I. Gaĭduk, Yu. I. Khurgin, and V. A. Kudryashova. **16**(4), 577–8 (Jan. 1974); CPM-7412X0977

Kumaigorodskaya, R. N.—Certain distinctive features of the structure of the atmospheres of magnetic stars —I. M. Kopylov and R. N. Kumaigorodskaya. **16**(2), 279 (Sep. 1973)

Kurdyumov, G. V.—Progress in the theory of strength and plasticity of solids (A review of A. V. Stepanov's works) —G. V. Kurdyumov and N. V. Klassen-Neklyudova. **16**(6), 828–33 (May 1974)

L

Landau, N. S.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Landsberg, L. G.—The search for quarks —L. G. Landsberg. **16**(2), 251–74 (Sep. 1973)

Lapidus, L. I.—Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. P. Dmitrievskiĭ, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

Lazurkin, Yu. S.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Letokhov, V. S.—Use of lasers in nuclear spectroscopy —V. S. Letokhov. **16**(4), 567–8 (Jan. 1974); CPM-7412X0967

Levin, E. M.—Duality, dual models, and experiment —E. M. Levin. **16**(5), 600–29 (Mar. 1974); CPM-7412X1208

Levinson, I. B.—Threshold phenomena and bound states in the polaron problem —I. B. Levinson and É. I. Rashba. **16**(6), 892–912 (May 1974)

Levshin, L. V.—Anton Nikoforovich Sevhenko (on his seventieth birthday) —L. V. Volod'ko, L. V. Levshin, and K. N. Solov'ev. **16**(1), 170–1 (Jul. 1973)

Linnik, V. P.—Kepler's works in optics (on the 400th anniversary of his birth) —V. P. Linnik. **16**(1), 132–5 (Jul. 1973)

Logunov, A. A.—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

Lomanov, M. F.—Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

Ludgovoi, V. N.—Theory of the propagation of high-power laser radiation in a nonlinear medium —V. N. Ludgovoi and A. M. Prokhorov. **16**(5), 658–79 (Mar. 1974); CPM-7412X1266

Luk'yanov, A. E.—Mirror electron microscopy —A. E. Luk'yanov, G. V. Spivak, and R. S. Gvozdover. **16**(4), 529–52 (Jan. 1974); CPM-7412X0929

M

Maĭer, V. V.—Magnetostriction emitters for lecture demonstrations on ultrasonics —V. V. Maĭer and V. É.-G. Khokhlovkin. **16**(6), 934–5 (May 1974)

Manoĭlov, S. E.—effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria —S. E. Manoĭlov, E. N. Chistyakova, V. F. Kondrat'eva, and M. A. Strelkova. **16**(4), 573–4 (Jan. 1974); CPM-7412X0973

Marchenko, T. I.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Marinov, M. S.—Interaction of high-energy particles with deuterons —V. M. Kolybasov and M. S. Marinov. **16**(1), 53–63 (Jul. 1973); CPM-7406X0203

Markov, M. A.—Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. P. Dmitrievskiĭ, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

—Global properties of matter in collapsed state ("black holes") —M. A. Markov. **16**(5), 587–99 (Mar. 1974); CPM-7412X1195

—Bruno Pontecorvo (on his sixtieth birthday) —A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

—The future of physics (future generations of particle accelerators) —M. A. Markov. **16**(6), 913–25 (May 1974)

Matora, I. M.—Linear induction accelerators-new generators of high power relativistic electron beams —Yu. P. Vakhrushin and I. M. Matora. **16**(3), 416–26 (Nov. 1973); CPM-7410X0756

Mel'nikova, V. M.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Men', A. V.—The UTR-2 decameter wave-band radiotelescope and the problems of —S. Ya. Braude and A. V. Men'. **16**(2), 284–6 (Sep. 1973)

Mikaélyan, N. P.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Mikhailov, A. V.—Formation of the ionosphere of Mars —G. S. Ivanov-Kholodnyĭ, A. V. Mikhailov, and N. A. Savich. **16**(5), 744–6 (Mar. 1974); CPM-7412X1352

Mikulinskiĭ, M. A.—Effect of small perturbations on the behavior of thermodynamics quantities near a second-order phase transition point —M. A. Mikulinskiĭ. **16**(3), 361–80 (Nov. 1973); CPM-7410X0701

Moiseev, S. S.—Problems of the theory of linear and nonlinear transformation of waves in inhomogeneous media —N. S. Erokhin and S. S. Moiseev. **16**(1), 64–81 (Jul. 1973); CPM-7406X0214

Monin, A. S.—Turbulence and microstructure in the ocean —A. S. Monin. **16**(1), 121–31 (Jul. 1973); CPM-7406X0271

Moroz, V. I.—"Mars-3": Astrophysical studies of the lower atmosphere and the surface of the planet —V. I. Moroz, L. V. Ksanfomaliti, and A. É. Nadzhip. **16**(5), 741–2 (Mar. 1974); CPM-7412X1349

Motulevich, G. P.—Electron and phonon characteristics of Nb_3Sn — A. I. Golovashkin and G. P. Motulevich. **16**(6), 940–1 (May 1974)

Muradyan, R. M.—Planning of new accelerators and the problems of contemporary elementary-particle physics —D. I. Blokhintsev, A. V. Efremov, and R. M. Muradyan. **16**(1), 82–7 (Jul. 1973); CPM-7406X0232

Mustel', É. R.—Action of solar particle fluxes on the lower layers of the earth's atmosphere —É. R. Mustel'. **16**(5), 739–40 (Mar. 1974); CPM-7412X1347

N

Nadzhip, A. É.—"Mars-3": Astrophysical studies of the lower atmosphere and the surface of the planet —V. I. Moroz, L. V. Ksanfomaliti, and A. É. Nadzhip. **16**(5), 741–2 (Mar. 1974); CPM-7412X1349

Natsik, V. D.—Dislocation dragging by electrons in metals —M. I. Kaganov, V. Ya. Kravchenko, and V. D. Natsik. **16**(6), 878–91 (May 1974)

O

Okhokhonina, G. M.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Orlov, E. P.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Ostrovskaya, G. V.—Laser spark in gases —G. V. Ostrovskaya and A. N. Zaidel'. **16**(6), 834–55 (May 1974)

P

Pakhomov, V. V.—Quasiperiodic components in the fluctuations of the solar radio-frequency radiation —M. M. Kobrin, A. I. Korshunov, and V. V. Pakhomov. **16**(2), 287–8 (Sep. 1973)

Penner, D. I.—Asynchronous excitation of undamped oscillations — D. I. Penner, D. B. Duboshinskiĭ, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Petrzhak, K. A.—Georgii Nikolaevich Flerov (on his 60th birthday) —A. P. Aleksandrov, Ya. V. Zel'dovich, K. A. Petrzhak, and I. M. Frank. **16**(2), 293–4 (Sep. 1973)

Pomerantsev, N. M.—Light diffraction in thick films —N. M. Pomerantsev. **16**(6), 819–27 (May 1974)

Pontecorvo, B. M.—Fedor L'vovich Shapiro (Obituary) —B. M. Pontecorvo and I. M. Frank. **16**(2), 295–7 (Sep. 1973)

—Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. P. Dmitrievskiĭ, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

Popov, V. N.—Covariant quantization of the gravitational field —L. D. Faddeev and V. N. Popov. **16**(6), 777–88 (May 1974)

Prokhorov, A. M.—Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

—Theory of the propagation of high-power laser radiation in a nonlinear medium —V. N. Ludgovoi and A. M. Prokhorov. **16**(5), 658–79 (Mar. 1974); CPM-7412X1266

Prokoshkin, Yu. D.—Bruno Pontecorvo (on his sixtieth birthday) — A. P. Aleksandrov, N. N. Bogolyubov, V. P. Dzhelepov, S. M. Korenchenko, M. A. Markov, A. A. Logunov, and Yu. D. Prokoshkin. **16**(5), 755–7 (Mar. 1974)

R

Rashba, É. I.—Threshold phenomena and bound states in the polaron problem —I. B. Levinson and É. I. Rashba. **16**(6), 892–912 (May 1974)

Rinkevicius, B. S.—The Doppler method of measuring local velocities using lasers —B. S. Rinkevicius. **16**(5), 712–25 (Mar. 1974); CPM-7412X1320

Rytov, S. M.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

S

Sagdeev, R. Z.—Laser thermonuclear fusion and parametric instabilities —R. Z. Sagdeev. **16**(4), 557–9 (Jan. 1974); CPM-7412X0957

Sautkin, V. A.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Savchenko, O. V.—Application of high-energy heavy charged particles in medicine —L. L. Gol'din, V. P. Dzhelepov, M. F. Lomanov, O. V. Savchenko, and V. S. Khoroshkov. **16**(3), 402–13 (Nov. 1973); CPM-7410X0742

Savich, N. A.—Study of the space plasma by the dispersion interferometer method —M. A. Kolosov and N. A. Savich. **16**(5), 742–3 (Mar. 1974); CPM-7412X1350

—Formation of the ionosphere of Mars —G. S. Ivanov-Kholodnyĭ, A. V. Mikhailov, and N. A. Savich. **16**(5), 744–6 (Mar. 1974); CPM-7412X1352

Sevast'yanova, L. A.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

—A study of the effects of millimeter-band microwaves on the bone marrow of mice —L. A. Sevast'yanova and R. L. Vilenskaya. **16**(4), 570–1 (Jan. 1974); CPM-7412X0970

Sever, G. A.—Demonstration of light diffraction by a two-dimensional ultrasound structure in a liquid —K. N. Baranskiĭ and G. A. Sever. **16**(1), 161–2 (Jul. 1973)

Shafranov, V. D.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Shapiro, I. S.—The interaction of slow antinucleons with nucleons and nuclei —I. S. Shapiro. **16**(2), 173–84 (Sep. 1973)

Shelest, V. P.—Description of inelastic processes in dual models (B_5 phenomenology) —L. L. Enkovszkiĭ and V. P. Shelest. **16**(5), 630–41 (Mar. 1974); CPM-7412X1238

Sheloput, D. V.—The current state of acoustooptics —D. V. Sheloput and S. V. Bogdanov. **16**(2), 283–4 (Sep. 1973)

Shitov, Yu P.—Pulsar observations at the radio-astronomical station of the USSR Academy of Sciences Physics Institute —Yu P. Shitov. **16**(2), 288–9 (Sep. 1973)

Shmakova, I. F.—Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

Shorygin, P. P.—Raman scattering of light near and far from resonance —P. P. Shorygin. **16**(1), 99–120 (Jul. 1973); CPM-7406X0249

Sidorenko, V. A.—Anatoliĭ Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Skobel'tsyn, D. V.—Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

—The momentum-energy tensor of the electromagnetic field —D. V. Skobel'tsyn. **16**(3), 381–401 (Nov. 1973); CPM-7410X0721

Skrotskiĭ, G. V.—Focused-image holography —I. S. Klimenko and G. V. Skrotskiĭ. **16**(1), 88–98 (Jul. 1973); CPM-7406X0238

Smolyanskaya, A. Z.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

—effects of millimeter-band electromagnetic radiation on the functional activity of certain genetic elements of bacterial cells — A. Z. Smolyanskaya and R. L. Vilenskaya. **16**(4), 571–2 (Jan. 1974); CPM-7412X0971

Smorodinskiĭ, Ya. A.—Johannes Kepler: From the mystery to the harmony —Yu. A. Danilov and Ya. A. Smorodinskiĭ. **16**(1), 136–55 (Jul. 1973)

Sobel'man, I. I.—Nikolaĭ Gennadievich Basov (on his fiftieth birthday) —A. I. Isakov, O. N. Krokhin, A. M. Prokhorov, D. V. Skobel'tsyn, and I. I. Sobel'man. **16**(1), 165–6 (Jul. 1973)

Sobolev, N. N.—The carbon monoxide laser. Population inversion mechanism —N. N. Sobolev and V. V. Sokovikov. **16**(3), 350–60 (Nov. 1973); CPM-7410X0690

Soboleva, N. A.—A new class of electron emitters —N. A. Soboleva. **16**(5), 726–38 (Mar. 1974); CPM-7412X1334

Sobolevskiĭ, N. M.—Interaction of particles and nuclei of high and ultrahigh energy with nuclei—V. S. Barashenkov, A. S. Il'inov, N. M. Sobolevskiĭ, and V. D. Toneev. **16**(1), 31–52 (Jul. 1973); CPM-7406X0181

Sokolik, I. A.—The effect of magnetic fields on photoprocesses in organic solids —I. A. Sokolik and E. L. Frankevich. **16**(5), 687–701 (Mar. 1974); CPM-7412X1295

Sokolovskiĭ, R. I.—Nonlinear effects in the emission and absorption spectra of gases in resonant optical fields —I. M. Beterov and R. I. Sokolovskiĭ. **16**(3), 339–49 (Nov. 1973); CPM-7410X0679

Sokovikov, V. V.—The carbon monoxide laser. Population inversion mechanism —N. N. Sobolev and V. V. Sokovikov. **16**(3), 350–60 (Nov. 1973); CPM-7410X0690

Solov'ev, K. N.—Anton Nikoforovich Sevhenko (on his seventieth birthday) —L. V. Volod'ko, L. V. Levshin, and K. N. Solov'ev. **16** (1), 170–1 (Jul. 1973)

Spivak, G. V.—Mirror electron microscopy —A. E. Luk'yanov, G. V. Spivak, and R. S. Gvozdover. **16**(4), 529–52 (Jan. 1974); CPM-7412X0929

Stepanov, B. I.—Nikolai Aleksandrovich Borisevich (on his fiftieth birthday) —V. V. Gruzinskii, B. I. Stepanov, V. A. Tolkachev, and F. I. Fedorov. **16**(5), 758–9 (Mar. 1974)

Strelkova, L. P.—Interference of 3-cm radio waves in a plane-parallel dielectric layer —L. P. Strelkova. **16**(6), 935–7 (May 1974)

Strelkova, M. A.—effects of millimeter-band electromagnetic waves on certain aspects of protein metabolism in bacteria —S. E. Manoilov, E. N. Chistyakova, V. F. Kondrat'eva, and M. A. Strelkova. **16**(4), 573–4 (Jan. 1974); CPM-7412X0973

Suchkov, A. F.—Compressed-gas lasers —N. S. Basov, É. M. Belenov, V. A. Danilychev, and A. F. Suchkov. **16**(4), 562–3 (Jan. 1974); CPM-7412X0962

Sycheva, N. A.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

Sytinskii, A. D.—Relation between seismic activity of the earth and solar activity —A. D. Sytinskii. **16**(5), 740–1 (Mar. 1974); CPM-7412X1348

T

Tatarskii, V. I.—Diffusive random process approximation in certain nonstationary statistical problems of physics —V. I. Klyatskin and V. I. Tatarskii. **16**(4), 494–511 (Jan. 1974); CPM-7412X0894

Timerov, R. Kh.—Feasibility of superconductivity in nonequilibrium systems with repulsion —V. M. Galitskii, V. F. Elesin, D. A. Kirzhnits, Yu. V. Kopaev, and R. Kh. Timerov. **16**(6), 941–2 (May 1974)

Timofeev, A. V.—Cyclotron oscillations of plasma in an inhomogeneous magnetic field —A. V. Timofeev. **16**(4), 445–58 (Jan. 1974); CPM-7412X0845

Tolkachev, V. A.—Nikolai Aleksandrovich Borisevich (on his fiftieth birthday) —V. V. Gruzinskii, B. I. Stepanov, V. A. Tolkachev, and F. I. Fedorov. **16**(5), 758–9 (Mar. 1974)

Toneev, V. D.—Interaction of particles and nuclei of high and ultrahigh energy with nuclei–V. S. Barashenkov, A. S. Il'inov, N. M. Sobolevskii, and V. D. Toneev. **16**(1), 31–52 (Jul. 1973); CPM-7406X0181

Treskunov, A. A.—Effects of millimeter-band radio waves on certain properties of bacteria —V. F. Kondrat'eva, E. N. Chistyakova, I. F. Shmakova, N. B. Ivanova, and A. A. Treskunov. **16**(4), 572–3 (Jan. 1974); CPM-7412X0972

Troitskii, V. S.—Radioastronomical observations with the aid of interferometers with independent reception (with ultralong base lines) in the USSR —V. S. Troitskii. **16**(2), 286–7 (Sep. 1973)

Tuchkevich, V. M.—Anatolii Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Tyapkin, A. A.—Venedikt Petrovich Dzhelepov (on his sixtieth birthday) —V. P. Dmitrievskii, L. I. Lapidus, M. A. Markov, B. M. Pontecorvo, and A. A. Tyapkin. **16**(3), 440–1 (Nov. 1973); CPM-7410X0780

U

Ukhanov, Yu. I.—Magnetooptic Faraday effect in semiconductors —Yu. I. Ukhanov. **16**(2), 236–50 (Sep. 1973)

Usagin, S. I.—Lecture demonstration on a bench with an air cushion —K. N. Baranskii, D. F. Kiselev, V. V. Korchazhkih, and S. I. Usagin. **16**(6), 937–8 (May 1974)

V

Vainshtein, B. K.—Three-dimensional electron microscopy of biological macromolecules —B. K. Vainshtein. **16**(2), 185–206 (Sep. 1973)

Vakhrushin, Yu. P.—Linear induction accelerators–new generators of high power relativistic electron beams —Yu. P. Vakhrushin and I. M. Matora. **16**(3), 416–26 (Nov. 1973); CPM-7410X0756

Valiev, K. A.—Rotational Brownian motion —K. A. Valiev and E. N. Ivanov. **16**(1), 1–6 (Jul. 1973); CPM-7406X0151

—Present day semiconductor microelectronics and the prospects of its development —K. A. Valiev. **16**(2), 281–3 (Sep. 1973)

Vermel', A. S.—Asynchronous excitation of undamped oscillations —D. I. Penner, D. B. Duboshinskii, M. I. Kozakov, A. S. Vermel', and Yu. V. Galkin. **16**(1), 158–60 (Jul. 1973)

Viktorov, I. A.—Ultrasonic and hypersonic surface waves —I. A. Viktorov. **16**(6), 943–4 (May 1974)

Vilenskaya, R. L.—Certain methodological problems and results of experimental investigation of the effects of microwaves on microorganisms and animals —É. B. Bazanova, A. K. Bryukhova, R. L. Vilenskaya, É. A. Gel'vich, M. B. Golant, N. S. Landau, V. M. Mel'nikova, N. P. Mikaélyan, G. M. Okhokhonina, L. A. Sevast'yanova, A. Z. Smolyanskaya, and N. A. Sycheva. **16**(4), 569–70 (Jan. 1974); CPM-7412X0969

—A study of the effects of millimeter-band microwaves on the bone marrow of mice —L. A. Sevast'yanova and R. L. Vilenskaya. **16** (4), 570–1 (Jan. 1974); CPM-7412X0970

—effects of millimeter-band electromagnetic radiation on the functional activity of certain genetic elements of bacterial cells — A. Z. Smolyanskaya and R. L. Vilenskaya. **16**(4), 571–2 (Jan. 1974); CPM-7412X0971

Vol'kenshtein, M. V.—Physics and biology —M. V. Vol'kenshtein. **16**(2), 207–16 (Sep. 1973)

Volkov, B. I.—General computer workshop for physics students of the Moscow State University —B. I. Volkov. **16**(1), 156–7 (Jul. 1973)

Volod'ko, L. V.—Anton Nikoforovich Sevhenko (on his seventieth birthday) —L. V. Volod'ko, L. V. Levshin, and K. N. Solov'ev. **16** (1), 170–1 (Jul. 1973)

Y

Yakovlev, I. A.—Mikhai Aleksandrovich Leontovich (on his 70th birthday) —A. P. Aleksandrov, L. A. Artsimovich, B. B. Kadomtsev, V. I. Kogan, A. M. Prokhorov, S. M. Rytov, V. D. Shafranov, and I. A. Yakovlev. **16**(2), 291–2 (Sep. 1973)

Yakovlev, O. I.—A study of propagation of radio waves in the solar system using soviet space stations —M. A. Kolosov and O. I. Yakovlev. **16**(5), 743–4 (Mar. 1974); CPM-7412X1351

Z

Zaidel', A. N.—Laser spark in gases —G. V. Ostrovskaya and A. N. Zaidel'. **16**(6), 834–55 (May 1974)

Zalyubovskaya, N. P.—Reactions of living organisms to exposure to millimeter-band electromagnetic waves —N. P. Zalyubovskaya. **16** (4), 574–6 (Jan. 1974); CPM-7412X0974

—Effects of millimeter-band electromagnetic waves on the cell and certain structural element of the cell —R. I. Kiselev and N. P. Zalyubovskaya. **16**(4), 576–7 (Jan. 1974); CPM-7412X0976

Zaslavskii, G. M.—Nonlinear waves and their interaction —G. M. Zaslavskii. **16**(6), 761–76 (May 1974)

Zel'dovich, Ya. B.—Scattering and emission of a quantum system in a strong electromagnetic wave —Ya. B. Zel'dovich. **16**(3), 427–33 (Nov. 1973); CPM-7410X0767

—Neutron stars and "black holes." —Ya. B. Zel'dovich. **16**(4), 559–61 (Jan. 1974); CPM-7412X0959

Zel'dovich, Ya. V.—Georgii Nikolaevich Flerov (on his 60th birthday) —A. P. Aleksandrov, Ya. V. Zel'dovich, K. A. Petrzhak, and I. M. Frank. **16**(2), 293–4 (Sep. 1973)

Zhdanov, G. B.—Search for transuranium elements (methods, results, and prospects) —G. B. Zhdanov. **16**(5), 642–57 (Mar. 1974); CPM-7412X1250

—Erratum: Search for transuranium elements (methods, results, and prospects) [Sov. Phys.-Usp. 16, 642 (1974)] —G. B. Zhdanov. **16** (6), 944 (May 1974)

Zheleznyakov, V. V.—On the Origin of Pulsar Radiation —V. V. Zheleznyakov. **16**(2), 289–90 (Sep. 1973)

Zhernokleev, N. L.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

Zhurkov, S. N.—Anatolii Petrovich Aleksandrov (on his seventieth birthday) —L. A. Artsimovich, I. I. Guervich, S. N. Zhurkov, I. K. Kikoin, Yu. S. Lazurkin, V. A. Sidorenko, V. M. Tuchkevich, and N. A. Chernoplekov. **16**(1), 167–9 (Jul. 1973)

Zuev, V. S.—Large multielement optical telescope with controllable mirror shape —M. I. Gvozdev, N. I. Dimov, N. L. Zhernokleev, V. S. Zuev, P. D. Kalachev, Yu. L. Kokurin, T. I. Marchenko, E. P. Orlov, and V. A. Sautkin. **16**(6), 943 (May 1974)

CURRENT PHYSICS REPRINTS

a service of the American Institute of Physics

Placing an order with Current Physics Reprints is your way to obtain a copy of the complete article published or to be published in the following journals:

American Journal of Physics
Applied Optics
Applied Physics Letters
The Astronomical Journal
The Journal of the Acoustical Society of America
Journal of Applied Physics
The Journal of Chemical Physics
Journal of Mathematical Physics
Journal of the Optical Society of America
*Journal of Physical and Chemical Reference Data
The Journal of Vacuum Science and Technology
Medical Physics
Physical Review-A,B,C,D
Physical Review Letters
The Physics of Fluids
The Physics Teacher
Physics Today
*Reviews of Modern Physics
The Review of Scientific Instruments
Optics and Spectroscopy
Soviet Astronomy
Soviet Journal of Nuclear Physics
Soviet Journal of Optical Technology
Soviet Journal of Particles and Nuclei
Soviet Journal of Quantum Electronics
Soviet Physics-Acoustics
Soviet Physics-Crystallography
Soviet Physics-Doklady
Soviet Physics-JETP
JETP Letters
Soviet Physics-Semiconductors
Soviet Physics-Solid State
Soviet Physics-Technical Physics
Soviet Physics-Uspekhi
Chinese Physics (Acta Physica Sinica)
AIP Conference Proceedings

*Please write for the prices of reprints of specific articles in *Journal of Physical and Chemical Reference Data* and the 1974 and later issues of *Reviews of Modern Physics*.

Orders are filled the same day they are received or the day of publication of the journal issue, whichever is later. Air mail delivery is available.

Price: 25¢ per article page (minimum order is $1.00) + postage.

If the article has already been published and its length is known, prepay by check or money order and save the cost of postage.

Note: Bulk reprint orders (minimum of 100 copies and additional lots of 50) should be sent to American Institute of Physics, Reprint Department.

Send me ___ copies of the following article:
(Please duplicate this form when ordering additional articles)

Title _____

Authors' Names _____

_____

from the journal:

Journal Title _____

Volume ____ Issue No. (or month) _____

Year ____ Page No. _____

Send orders to:

American Institute of Physics
Current Physics Reprints
335 East 45th Street
New York, N.Y. 10017

Name _____

Address _____

City _____

State _____ ZIP ____

Country _____

☐ Check or money order enclosed (25¢ per article page—minimum order is $1.00). Payable to American Institute of Physics

☐ Bill me (25¢ per article page—minimum order is $1.00 + postage)